

ClaimsSub
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1. A method for identifying face regions in a color image comprising:
providing image representative data including data representative of
chrominance for incremental portions of said image;
5 comparing said chrominance representative data for each incremental
image portion to chrominance values known to be representative of
skin tones, to thereby distinguish image portions representing skin
tone colors from other image portions; and
the shape comparing regions having contiguous skin tone image portions to
10 templates consistent with the shape of a human face image to
thereby identify possible face regions.
2. A method as specified in claim 1 wherein said step of comparing the shape
of regions, includes comparing said regions to rectangular templates.
3. A method as specified in claim 2 wherein said rectangular templates have
15 vertical to horizontal aspect ratios between 1 and 1.7.
4. A method as specified in claim 2 wherein there is provided a further step of
comparing the spatial frequency characteristics of data representing
luminance in said false face regions to at least one threshold value, and
eliminating possible face regions having spacial frequency characteristics
20 below said threshold value.
5. A method as specified in claim 4, wherein said spatial frequency
characteristics comprise the ratio of vertical energy to horizontal energy.
6. A method as specified in claim 5, further comprising comparing the DC
energy of data representing luminance in said possible face regions to a

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second threshold and eliminating false face regions having DC energy above a second threshold value.

- 5 7. A method as specified in claim 1 for use in connection with image representative data comprising an MPEG signal wherein said step of comparing and chrominance representative components comprises comparing said components in incremental image portions comprising MPEG macroblocks.
- 10 8. A method as specified in claim 7 wherein said step of comparing said chrominance representative data is applied to an I frame of said MPEG signal.
9. A method as specified in claim 8 wherein said step of comparing said chrominance representative data comprises comparing the DC component of said chrominance representative data.
- 15 10. A method as specified in claim 7 wherein said step of comparing the shape of regions further comprises eliminating regions having less than a selected number of macroblocks.
- 20 11. A method as specified in claim 7 wherein said step of comparing the shape of region comprises comparing said regions to rectangular templates using the top and side edges of said templates.
- 25 12. A method as specified in claim 11 wherein said step of comparing the shape of regions comprises comparing the number of macroblocks in said rectangular template having chrominance regions representing skin tones to the number of macroblocks adjoining said rectangular template on said top and side edges having chrominance regions representing skin tones.

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13. A method as specified in claim 7, further comprising applying a spatial cross median filter to adjacent macroblocks.
14. A method as specified in claim 1 wherein said step of comparing the shape of regions includes dividing said image into segments having skin tone image portions and segments not having skin tone image portions.
15. A method for identifying face regions in a color image represented as data, including chrominance data for incremental portions of said image comprising comparing said chrominance data for each image portion to chrominance data values known to be representative of skin tones and characterizing the corresponding image portion as skin tone or not skin tone, and comparing the shape of regions having contiguous skin tone image portions to at least one shape template to thereby identify face regions.

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